

## CLAIMS

What is claimed is:

1. A method of enhancing the survival of a cell comprising the steps of administering to the cell a composition that regulates telomere stability in the cell.
2. The method of claim 1, wherein the cell is in a tissue.
3. The method of claim 3, wherein the tissue is in a human.
4. The method of claim 1, wherein the cell is a cardiomyocyte.
5. The method of claim 1, wherein the cell is under oxidative stress.
6. The method of claim 1, wherein the composition comprises a modulator of telomeric repeat binding factor-2 (TRF2).
7. The method of claim 6, wherein the modulator is telomerase reverse transcriptase (TERT).
8. The method of claim 6, wherein the modulator is an inhibitor of hematopoietic progenitor kinase/germinal center kinase like kinase (HGK).
9. The method of claim 1, wherein the composition comprises a modulator of cell cycle checkpoint kinase 2 (Chk2).
10. A method of treating a subject suffering from a cardiovascular disease comprising the step of administering to the subject an effective amount of a composition to regulate telomere stability, wherein the effective amount increases cardiomyocyte survival.
11. The method of claim 10, wherein the composition comprises a modulator of TRF2.
12. The method of claim 11, wherein the modulator is TERT.
13. The method of claim 11, wherein the modulator is an inhibitor of HGK.
14. The method of claim 10, wherein the composition comprises a modulator of Chk2.

15. The method of claim 10, wherein said cardiovascular disease is selected from the group consisting of coronary artery disease, myocardial infarction, heart failure, ischemic heart disease, and angina.
16. The method of claim 15, wherein said cardiovascular disease is myocardial infarction.
17. The method of claim 16, wherein said myocardial infarction is caused by arterial obstruction.
18. The method of claim 10, wherein said cardiovascular disease is caused by oxidative stress on cardiomyocytes.
19. The method of claim 10, wherein said cardiovascular disease is caused by telomere loss and/or telomere dysfunction in cardiomyocytes.
20. The method of claim 19, wherein said telomere loss and/or dysfunction results in apoptosis.
21. The method of claim 20, wherein said apoptosis is associated with check point kinase Chk2 activation.
22. The method of claim 11, wherein said modulator increases activity of said TRF2.
23. The method of claim 11 wherein said modulator increases the expression of said TRF2.
24. The method of claim 11, wherein said modulator increases the stability of said TRF2.
25. The method of claim 10, wherein said composition comprises an expression vector having a polynucleotide sequence encoding a TRF2 protein.
26. The method of claim 14, wherein said modulator inhibits Chk2 activity.
27. The method of claim 14, wherein said modulator reduces expression of Chk2.
28. The method of claim 14, wherein said modulator increases degradation of Chk2.
29. The method of claim 14, wherein said modulator destabilizes Chk2.

30. A method of treating a subject suffering from a myocardial infarction comprising the step of administering to the subject an effective amount of a composition to regulate telomere stability, wherein the effective amount increases cardiomyocyte survival.